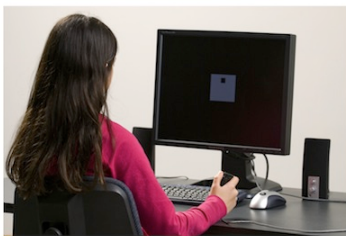


The Test Of Variables of Attention (T.O.V.A.®)

The **Test of Variables of Attention (T.O.V.A.)** is a state-of-the-art continuous performance test that provides objective measurements of attention and inhibitory control for children and adults (ages 4 - 80+). It augments subjective measures (e.g., behavior ratings and history) and provides a more comprehensive picture of attention and inhibitory control.



The T.O.V.A. continuously measures performance during a 10.8-minute task or a 21.6-minute task, depending on age. It records speed, accuracy, and consistency of responses to a series of squares (in the visual T.O.V.A. test) or tones (in the auditory T.O.V.A. test) that are presented in two-second intervals. These measurements (accurate to ± 1 ms) are then compared by age and gender to a large normative sample (a sample of people without attention problems). This comparison determines whether the test results are "within normal limits" or not. The T.O.V.A. also compares results to a group of people independently diagnosed with ADHD. The T.O.V.A. report is based on these two comparisons, as well as performance, session, and response validity measures.



If you have questions about this report, please contact the person who provided it to you. For more information about attention and the T.O.V.A., please visit our website at <https://www.tovatest.com/>. To contact us please email info@tovatest.com or call 800.PAY.ATTN (562.594.7700).



ID: **211** **Myriam El Chami** (Apr 24, 2007)
Female - 17y 4m 24d

Auditory T.O.V.A. (v8.3-447 sn21762)
 Sep 17, 2024 at 4:56 PM

Session and Response Validity

This session meets session and response validity criteria.

T.O.V.A. Interpretation

The results of this T.O.V.A. are not within normal limits, and may be suggestive of a possible attention deficit, including ADHD. Please see the Interpretation Notes page for important information about this report.

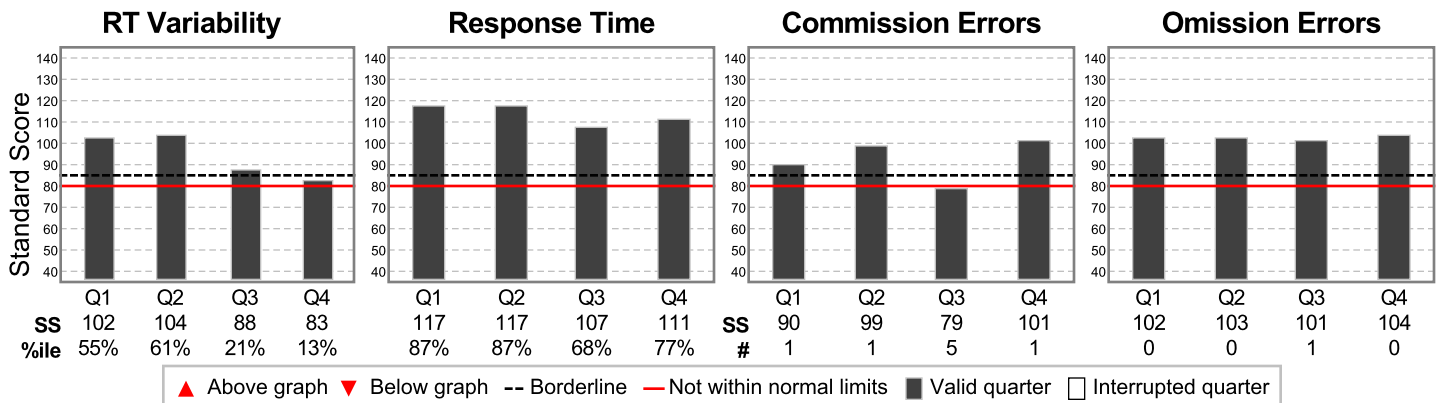
Treatment

No treatments entered.

Comparison to the Normative Sample

These scores compare this subject's performance to the performance of individuals of the same gender and age in the T.O.V.A. Normative Sample, a study of individuals who did not have attention problems.

Results are reported as standard scores (average = 100 with a standard deviation of 15) and are compared to a large normative sample stratified by gender and age. Scores above 85 are within normal limits, 80-85 are borderline, and below 80 are not within normal limits. See the Interpretation Notes page and the Analyzed Data page for more detailed information on these variables and on the subject's performance.





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Auditory T.O.V.A. (v8.3-447 sn21762)
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Notes on the Comparison to the Normative Sample

Variability is a precise measure of variations in correct response times, and measures the consistency of response times. **Variability was borderline in Quarter 4.**

Response Time is the average speed of correct responses to targets, and is a measure of information processing speed. **Response Time was within normal limits.**

Commission Errors occur when the subject incorrectly responds to a nontarget, and are a measure of inhibitory control. **Commission Errors were not within normal limits in Quarter 3.**

Omission Errors occur when the subject does not respond to a target, and are a measure of sustained attention. **Omission Errors were within normal limits.**

Response Patterns

Quarter 3 is not within normal limits and Quarter 4 is borderline. This may represent poor task performance under conditions of high arousal and/or a decline in performance after 10 minutes of a task.

Other Notes

Consider administering a Visual T.O.V.A. to this subject for a more comprehensive assessment of attention. This is important because an individual can have markedly different results on one test versus the other.

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Female - 17y 4m 24d

Auditory T.O.V.A. (v8.3-447 sn21762)
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Treatment

No treatments entered.

Comparison to the Normative Sample

Results below are reported as standard scores (average standard = 100; standard deviation = 15). Scores indicate deviation from the performance of a large normative sample stratified by gender and age. Standard scores above 85 are considered to be in the normal range, scores between 85 and 80 are considered borderline, and scores below 80 are considered not within normal limits. Scores less than 70 are considered significantly below normal range. Standard scores less than 40 are more than 4 standard deviations from normal and are denoted as "<40". Quarters, Halves and Totals are independently calculated and are not averages.

| | Quarter | | | | Half | | Total |
|--------------------------|------------|-----|----------|-----|------|-----|-------|
| | 1 | 2 | 3 | 4 | 1 | 2 | |
| RT Variability | 102 | 104 | 88 | 83 | 105 | 86 | 89 |
| Response Time | 117 | 117 | 107 | 111 | 117 | 109 | 111 |
| Commission Errors | 90 | 99 | 79 | 101 | 97 | 90 | 94 |
| Omission Errors | 102 | 103 | 101 | 104 | 105 | 103 | 103 |
| | Infrequent | | Frequent | | | | |

Key: Borderline, Not within normal limits, Invalid

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Auditory T.O.V.A. (v8.3-447 sn21762)
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This page contains tabulated raw data and documents T.O.V.A. session parameters.

| | | Quarter | | | | Half | | Total |
|---------------------------|----|------------|---------|----------|---------|---------|---------|---------|
| | | 1 | 2 | 3 | 4 | 1 | 2 | |
| RT Variability | ms | 83 | 88 | 169 | 201 | 86 | 187 | 170 |
| Response Time | ms | 375 | 394 | 439 | 399 | 385 | 419 | 411 |
| Post-commission responses | # | 0 | 0 | 5 | 1 | 0 | 6 | 6 |
| Response Time | ms | 0 | 0 | 434 | 456 | 0 | 438 | 438 |
| Variability | ms | 0 | 0 | 138 | 0 | 0 | 126 | 126 |
| Commission Errors | # | 1/126 | 1/126 | 5/36 | 1/36 | 2/252 | 6/72 | 8/324 |
| Percentage | % | 0.8 | 0.8 | 13.9 | 2.8 | 0.8 | 8.3 | 2.5 |
| Response Time | ms | 667 | 401 | 313 | 301 | 534 | 311 | 367 |
| Omission Errors | # | 0/36 | 0/36 | 1/126 | 0/126 | 0/72 | 1/252 | 1/324 |
| Percentage | % | 0 | 0 | 0.8 | 0 | 0 | 0.4 | 0.3 |
| D Prime | | 6.68 | 6.68 | 3.5 | 6.18 | 6.68 | 4.04 | 4.7 |
| Standard Score | | 81 | 84 | 71 | 96 | 88 | 80 | 83 |
| Beta | | 0 | 0 | 0.1 | 0 | 0 | 0.08 | 0.16 |
| Anticipatory | % | 0 | 0 | 0.6 | 2.5 | 0 | 1.5 | 0.8 |
| To Nontargets | # | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| To Targets | # | 0 | 0 | 1 | 3 | 0 | 4 | 4 |
| Multiple Responses | # | 1 | 0 | 0 | 1 | 1 | 1 | 2 |
| Total Correct | # | 161/162 | 161/162 | 155/162 | 157/162 | 322/324 | 312/324 | 634/648 |
| Correct Responses | # | 36/36 | 36/36 | 124/126 | 123/126 | 72/72 | 247/252 | 319/324 |
| Correct Nonresponses | # | 125/126 | 125/126 | 31/36 | 34/36 | 250/252 | 65/72 | 315/324 |
| Skew | ms | 43 | 86 | -65 | 112 | 66 | 153 | 88 |
| User Interrupts | # | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hardware errors | # | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Infrequent | | Frequent | | | | |

Tester: Ahmad Oueini

Session parameters

Format: 1 (standard)
 ISI: 2000 ms
 Stimulus On Time: 200 ms
 Stimulus Off Time: 300 ms
 Anticipatory Cutoff: 150 ms

Session information

Import Filename:
 Import Date:
 Errors/Warnings: User interrupted the test (1)

Hardware information

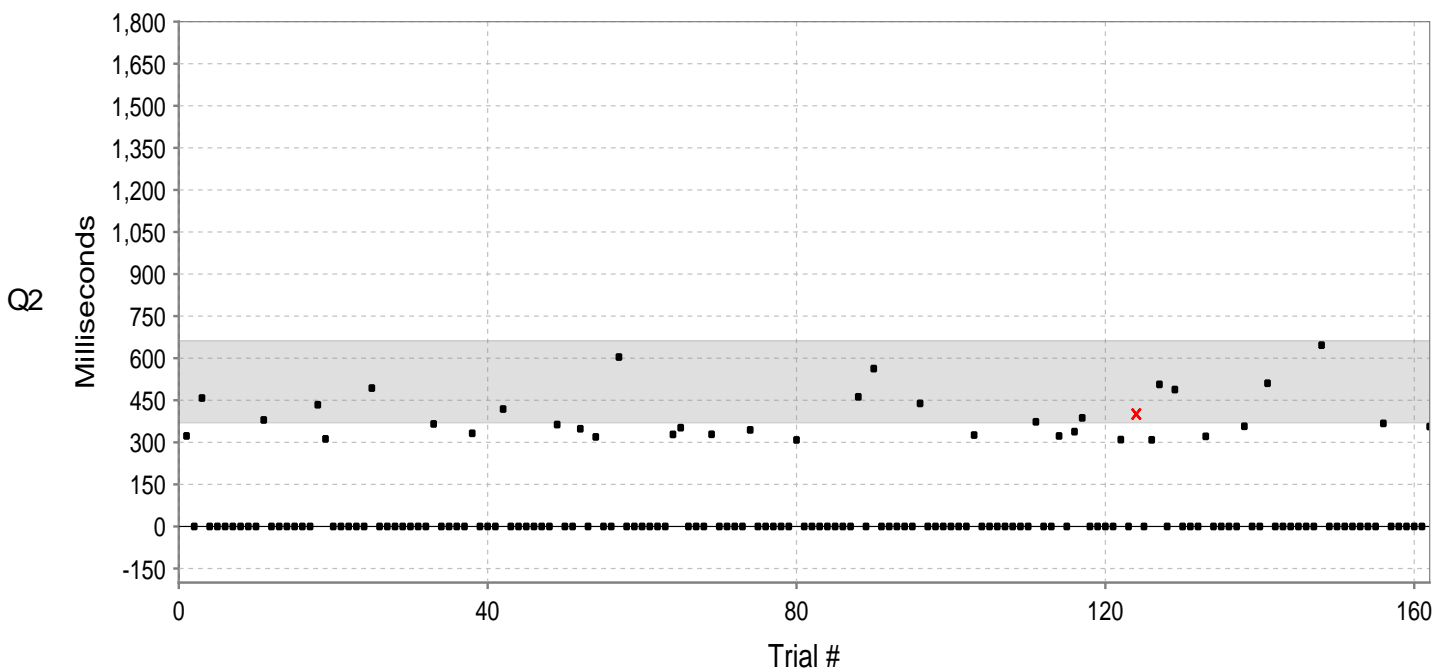
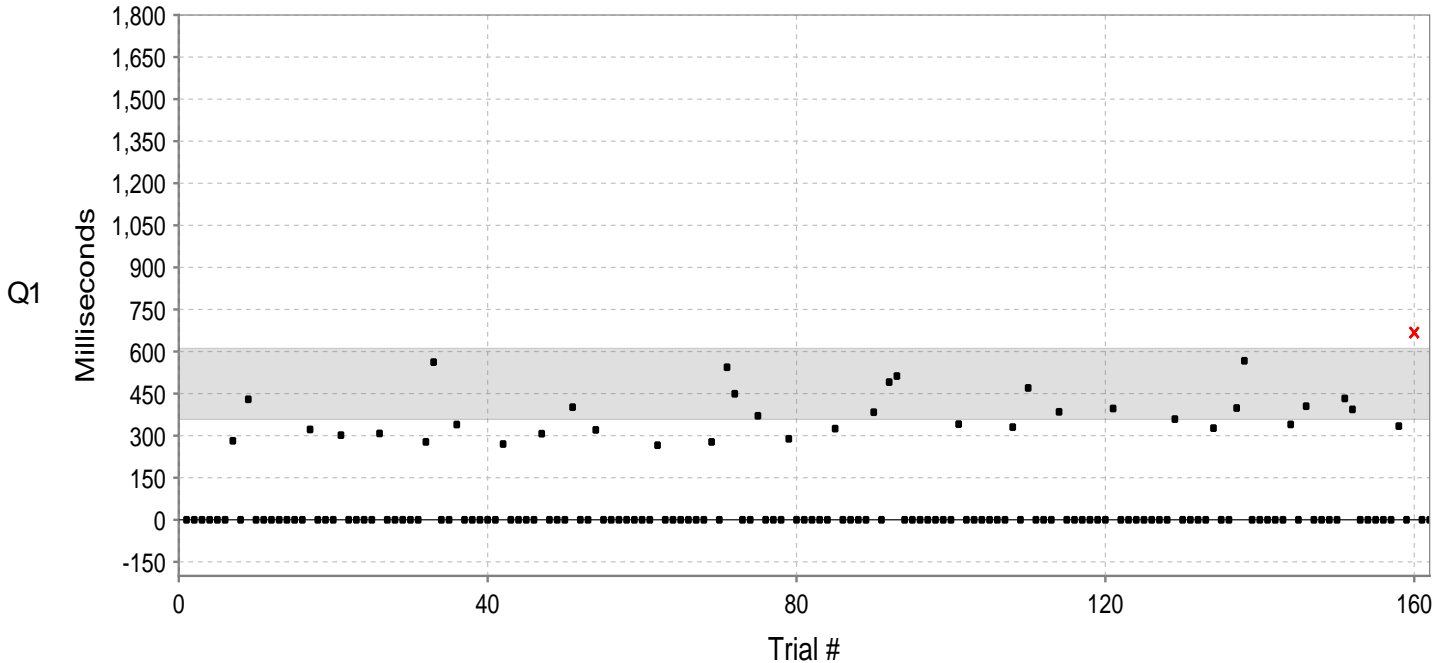
Session mode: PTE, 101.2-47-g28d1f11
 USB device: HW 5, BD 1843, FW 1.1-219-gd36f0e2
 Microswitch: HW 3, BD 0, FW 9



ID: **211** **Myriam El Chami** (Apr 24, 2007)
Female - 17y 4m 24d

Auditory T.O.V.A. (v8.3-447 sn21762)
 Sep 17, 2024 at 4:56 PM

This page graphically displays the subject's responses. Black squares mark correct responses and correct nonresponses. Red 'X's mark commission errors, red squares mark anticipatory responses, and underlined red circles mark omission errors. The light gray region represents the normative range of responses. Commission errors followed by a correct response are linked by a line: an upward slope (light gray) indicates slowing down following an error (typical), and a downward slope (black) indicates speeding up after making an error (unusual). Red numbers above the zero line indicate the number of missed targets (if three or more in a row), and the red number below the zero line indicates the number of seconds elapsed between correct target responses.



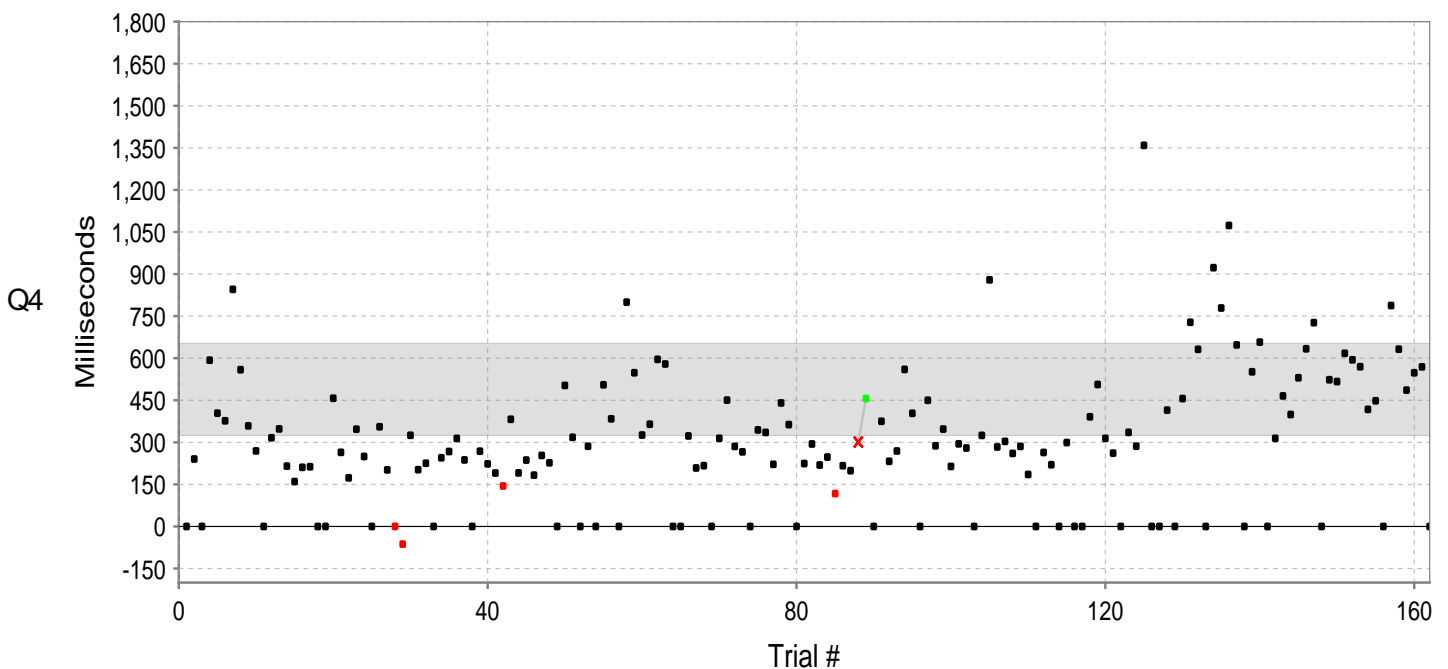
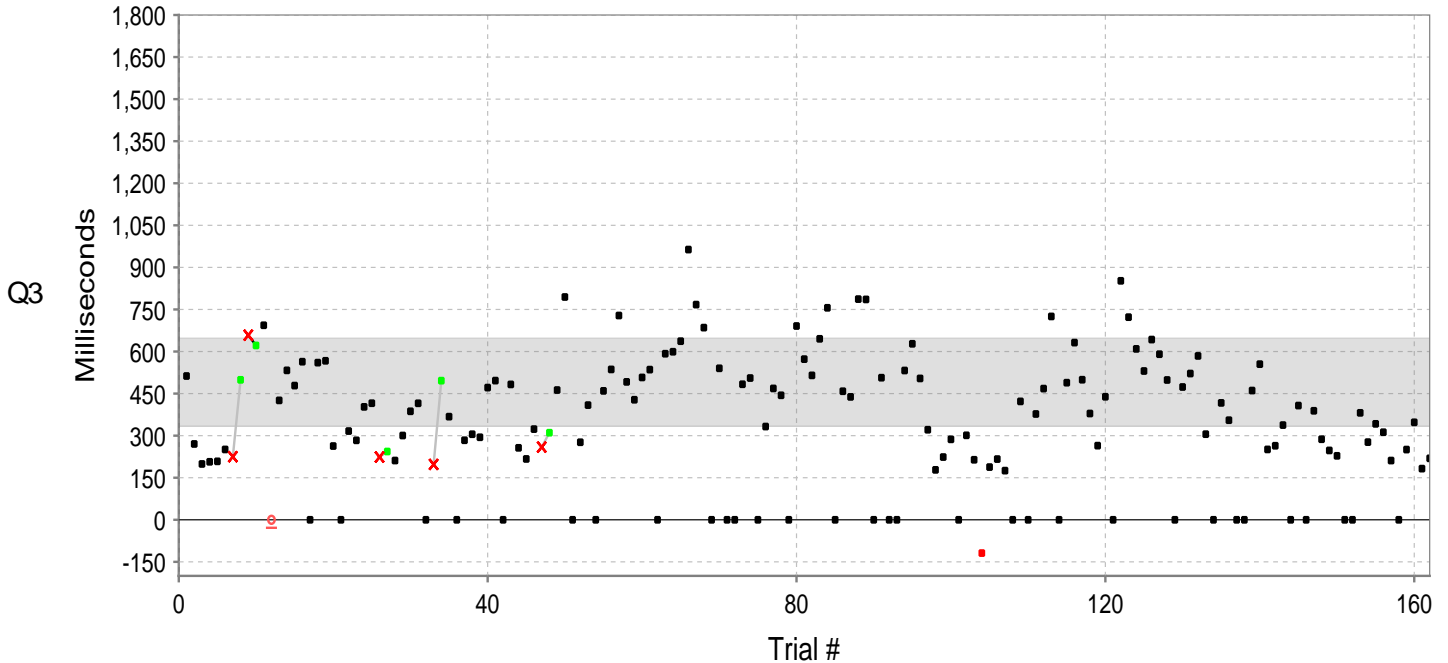
| | | | | |
|--|-----------------------------|-----------------------------|--|-------------------------|
| ■ Correct response | ■ Correct non-response | ✗ Commission error | ○ Omission error | ■ Anticipatory response |
| ■ Post-commission error correct response | — Slower post-commission RT | — Faster post-commission RT | | |
| ▲△ Off-scale resp./error | ■ Normative range | Interruption | 3 10s Response gap (# Targets and Sec) | |



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Female - 17y 4m 24d

Auditory T.O.V.A. (v8.3-447 sn21762)
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■ Correct response ■ Correct non-response ✕ Commission error ○ Omission error ■ Anticipatory response
 ■ Post-commission error correct response / Slower post-commission RT \ Faster post-commission RT
 ▲▲ Off-scale resp./error ■ Normative range | Interruption 3 10s Response gap (# Targets and Sec)

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Female - 17y 4m 24d

Auditory T.O.V.A. (v8.3-447 sn21762)
Sep 17, 2024 at 4:56 PM

This page shows a trial-by-trial view of T.O.V.A. test data. Each entry in the table indicates the stimulus type (target or nontarget) and the subject's response to that stimulus. Error responses are shown in red, and response times are in milliseconds. A negative response time indicates a response that was made before the stimulus was presented.

| 1-27 | | 28-54 | | 55-81 | | 82-108 | | 109-135 | | 136-162 | | 163-189 | | 190-216 | | 217-243 | | 244-270 | | 271-297 | | 298-324 | |
|------|-----|-------|-----|-------|-----|--------|-----|---------|-----|---------|-----|---------|------|---------|-----|---------|-----|---------|-----|---------|-----|---------|-----|
| N | | N | | N | | N | | N | | N | | T | 322 | N | | N | | N | | N | | N | |
| N | | N | | N | | N | | T | 470 | T | 398 | N | | N | | N | | N | | N | | N | |
| N | | N | | N | | N | | N | | T | 566 | T | 458 | N | | T | 604 | N | | T | 373 | T | 357 |
| N | | N | | N | | T | 325 | N | | N | | N | | N | | N | | N | | N | | N | |
| N | | T | 277 | N | | N | | N | | N | | N | | N | | N | | N | | N | | N | |
| N | | T | 562 | N | | N | | T | 384 | N | | N | | T | 365 | N | | N | | T | 322 | T | 510 |
| T | 281 | N | | N | | T | 265 | N | | N | | N | | N | | N | | T | 462 | N | | N | |
| T | 429 | T | 339 | N | | N | | T | 383 | N | | T | 340 | N | | N | | T | 562 | T | 338 | N | |
| N | | N | | N | | N | | N | | N | | N | | N | | T | | N | | T | 387 | N | |
| N | | N | | N | | T | 490 | N | | N | | T | 405 | N | | T | 328 | N | | N | | N | |
| N | | N | | N | | T | 512 | N | | N | | T | | T | 379 | T | 352 | N | | N | | N | |
| N | | N | | N | | N | | T | 396 | N | | N | | N | | N | | N | | N | | T | 646 |
| N | | N | | N | | N | | N | | N | | N | | N | | N | | N | | T | 309 | N | |
| N | | T | 270 | T | 277 | N | | N | | N | | T | 432M | N | | T | 328 | T | 438 | N | | N | |
| T | 322 | N | | T | 543 | N | | N | | N | | T | 393 | N | | N | | N | | C | 400 | N | |
| N | | N | | T | 449 | N | | N | | N | | N | | T | 434 | N | | N | | N | | T | 308 |
| N | | N | | N | | N | | N | | N | | N | | T | 312 | N | | N | | T | 506 | N | |
| N | | T | 306 | N | | T | 341 | N | | N | | N | | N | | T | 344 | N | | N | | T | 367 |
| T | 301 | N | | T | 370 | N | | T | 359 | N | | N | | N | | N | | N | | T | 488 | T | 367 |
| N | | N | | N | | N | | N | | N | | N | | T | 363 | N | | T | 325 | N | | N | |
| N | | N | | N | | N | | N | | N | | T | 334 | N | | N | | N | | N | | N | |
| N | | T | 401 | N | | N | | N | | N | | N | | N | | N | | N | | N | | N | |
| N | | N | | T | 288 | N | | N | | N | | C | 667 | N | | T | 348 | N | | T | 321 | N | |
| T | 307 | N | | N | | N | | T | 326 | N | | N | | N | | T | 308 | N | | N | | N | |
| N | | T | 320 | N | | T | 330 | N | | N | | N | | N | | T | 319 | N | | N | | T | 356 |

| 325-351 | | 352-378 | | 379-405 | | 406-432 | | 433-459 | | 460-486 | | 487-513 | | 514-540 | | 541-567 | | 568-594 | | 595-621 | | 622-648 | |
|---------|-----|---------|-----|---------|-----|---------|------|---------|-----|---------|-----|---------|-----|---------|-----|---------|-----|---------|-----|---------|------|---------|------|
| T | 512 | T | 211 | T | 459 | T | 514 | T | 422 | T | 355 | N | | TA | 0 | T | 505 | T | 294 | T | 285 | T | 1073 |
| T | 270 | T | 300 | T | 536 | T | 645 | N | | N | | T | 240 | TA | -62 | T | 383 | T | 219 | T | 185 | T | 647 |
| T | 199 | T | 386 | T | 728 | T | 755 | T | 377 | N | | N | | T | 325 | N | | T | 247 | N | | N | |
| T | 206 | T | 415 | T | 491 | N | | T | 467 | T | 460 | T | 592 | T | 202 | T | 799 | TA | 117 | T | 263 | T | 551 |
| T | 208 | N | | T | 428 | T | 458 | T | 725 | T | 554 | T | 403 | T | 225 | T | 548 | T | 216 | T | 220M | T | 657 |
| T | 250 | C | 197 | T | 507 | T | 438 | N | | T | 250 | T | 376 | N | | T | 325 | T | 198 | N | | N | |
| C | 224 | T | 496 | T | 535 | T | 786 | T | 488 | T | 264 | T | 845 | T | 244 | T | 364 | C | 300 | T | 299 | T | 314 |
| T | 499 | T | 367 | N | | T | 785 | T | 631 | T | 337 | T | 559 | T | 267 | T | 595 | T | 456 | N | | T | 465 |
| C | 658 | N | | T | 592 | N | | T | 499 | N | | T | 358 | T | 313 | T | 579 | N | | N | | T | 399 |
| T | 621 | T | 283 | T | 599 | T | 506 | T | 378 | T | 407 | T | 269 | T | 237 | N | | T | 374 | T | 391 | T | 530 |
| T | 693 | T | 305 | T | 636 | N | | T | 264 | N | | N | | N | | N | | T | 232 | T | 506 | T | 633 |
| O | | T | 294 | T | 963 | N | | T | 438 | T | 388 | T | 316 | T | 268 | T | 322 | T | 269 | T | 314 | T | 726 |
| T | 425 | T | 471 | T | 767 | T | 532 | N | | T | 287 | T | 347 | T | 223 | T | 208 | T | 559 | T | 261 | N | |
| T | 532 | T | 496 | T | 685 | T | 627 | T | 852 | T | 247 | T | 215 | T | 190 | T | 216 | T | 403 | N | | T | 523 |
| T | 478 | N | | N | | T | 504 | T | 722 | T | 228 | T | 160 | NA | 144 | N | | N | | T | 335 | T | 516 |
| T | 563 | T | 482 | T | 540 | T | 321 | T | 609 | N | | T | 210 | T | 382 | T | 314 | T | 449 | T | 286 | T | 617 |
| N | | T | 256 | N | | T | 178 | T | 530 | N | | T | 212 | T | 190 | T | 450 | T | 287 | T | 1358 | T | 594 |
| T | 560 | T | 216 | N | | T | 223 | T | 642 | T | 381 | N | | T | 236 | T | 285 | T | 347 | N | | T | 569 |
| T | 566 | T | 323 | T | 483 | T | 286 | T | 590 | T | 276 | N | | T | 182 | T | 266 | T | 213 | N | | T | 417 |
| T | 262 | C | 259 | T | 505 | N | | T | 498 | T | 342 | T | 457 | T | 253 | N | | T | 294 | T | 414 | T | 448 |
| N | | T | 310 | N | | T | 301 | N | | T | 312 | T | 264 | T | 227 | T | 344 | T | 279 | N | | N | |
| T | 316 | T | 462 | T | 332 | T | 214 | T | 473 | T | 211 | T | 173 | N | | T | 335 | N | | T | 456 | T | 787 |
| T | 283 | T | 794 | T | 468 | TA | -118 | T | 521 | N | | T | 346 | T | 502 | T | 221 | T | 324 | T | 728 | T | 632 |
| T | 402 | N | | T | 443 | T | 187 | T | 584 | T | 250 | T | 249 | T | 317 | T | 440 | T | 879 | T | 631 | T | 486 |
| T | 415 | T | 276 | N | | T | 216 | T | 305 | T | 347 | N | | N | | T | 363 | T | 283 | N | | T | 547 |
| C | 223 | T | 408 | T | 690 | T | 175 | N | | T | 182 | T | 355 | T | 285 | N | | T | 303 | T | 922 | T | 569 |
| T | 243 | N | | T | 572 | N | | T | 416 | T | 219 | T | 201 | N | | T | 224 | T | 260 | T | 779 | N | |

T = Correct response to target

O = Omission error

A = Anticipatory response

N = Correct nonresponse to nontarget

C = Commission error

M = Multiple response

Green = Post-Commission-error correct response

U = User interrupt

H = Hardware interrupt